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EXAMINER

PAYNE, SHARON E

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| ART UNIT | PAPER NUMBER |
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2875

DATE MAILED: 03/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/074,466

Applicant(s)

LEE ET AL.

Examiner

Sharon E. Payne

Art Unit

2875

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 12-25 is/are rejected.
- 7) ☒ Claim(s) 11 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 2 and 18 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. These claims merely require the light generating means to have a light source. All light generating devices have a light source.

2. Claims 5, 16 and 21 are objected to because of the following informality: the word "V-shape" should be "V' shape" in line 2 of all three claims.

3. Claim 7 is objected to because of the following informality: a couple of spaces need to be deleted between "value" and "of" in line 1.

4. Claim 9 is objected to because of the following informalities: both occurrences of "light source" should be "light sources" in line 2.

5. Claim 10 is objected to because of the following informalities: 1) a space should be inserted between "claim" and "8" in line 1; 2) both occurrences of "light source" should be "light sources" in line 2.

6. Claim 11 is objected to because of the following informalities: both occurrences of "light source" need to be changed to "light sources" in lines 4-5.

7. Claim 17 is objected to because of the following informalities: 1) it appears that the phrase "of the light" in the last line of the claim should be deleted, and 2) it appears that the word "decreases" is omitted from the end of the claim. For purposes of

this office action, it will be assumed that the Applicant meant to use the word "decreases" at the end of the claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-4, 6-9, 12, 13 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Redmond et al. (U.S. Patent 5,664,862).

Regarding claim 1, Redmond discloses an edge light for a panel display. The edge light includes a light generating means for generating a light (reference number 47); a first light guide means including a first portion through which the light is incident and a second portion from which the light is emitted (lighting panel, reference number 13), and a second light guiding means (reference number 14) including opposite first and second side portions (Fig. 1) at least one of which is adjacent to the light generating means (Fig. 1), a light projecting portion (reference number 34) adjacent to the first portion of the first light guiding means (Fig. 1), and a light reflecting portion (reference number 35) having a distance from the light projecting portion (Fig. 2), the distance between the light projecting portion and the light reflecting portion becoming narrow as

an amount of a light flux of the light emitted from the light generating means decreases (Fig. 2).

Concerning claim 2, Redmond discloses the light generating means including at least one light source (reference number 47).

Regarding claim 3, Redmond discloses a point-shaped light source (column 1, lines 15-20).

Concerning claim 4, Redmond discloses a concave section on the light reflecting portion (Fig. 2).

Concerning claim 6, Redmond discloses the concave section as having a bottom portion (Fig. 2), and a position of the bottom portion is defined by a following equation:

$X : Y = w1 : w2$, wherein X is a linear distance from the first side portion to the bottom portion, Y is a linear distance from the second side portion to the bottom portion, X+Y is a linear distance from the first side portion to the second side portion, w1 is a width of the first side portion, and w2 is a width of the second side portion (Fig. 2). (The middle of the light reflecting portion is part of the bottom portion, and the middle satisfies the above equation.)

Examiner's Note: The colon in the above equation appears to mean "in proportion to." If this is not correct, please indicate the intended meaning in your response. (This mathematical symbol is rarely used, and the meaning may be misconstrued.)

Regarding claim 7, Redmond et al. discloses the value of X being substantially equal to the value of Y (Fig. 2). (The middle of the light reflecting portion is part of the bottom portion, and the middle satisfies the above equation.)

Concerning claim 8, Redmond et al. discloses at least one first light source (reference number 47) adjacent to the first side portion of the second light guiding means (Fig. 2) and at least one second light source (reference number 47) adjacent to the second side portion of the second light guiding means (Fig. 2).

Regarding claim 9, Redmond et al. discloses the number of first light sources being the same as the number of second light sources (Fig. 2).

Concerning claim 12, Redmond et al. discloses a linear distance between the bottom portion and the light projecting portion is smaller than a smaller width of the widths of the first and second side portions (Fig. 2).

Regarding claim 13, Redmond et al. discloses the concave section comprising a plurality of groove patterns (Figs. 2 and 3).

Concerning claim 15, Redmond discloses a light generating means for generating light (reference number 47), a first light guiding means including a first portion through which the light is incident and a second portion from which the light is emitted (reference number 13), and a second light guiding means including opposite first and second side portions (Fig. 1), at least one of which is adjacent to the light generating means (Fig. 1), a light projecting portion (reference number 34) adjacent to the first portion of the first light guiding means (Fig. 1), and a light reflecting portion

(reference number 35) opposite the light projecting portion (Fig. 2), the light reflecting portion having a concave form (Fig. 2).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

12. Claims 17-20 and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Redmond et al. in view of Fitzgibbons (U.S. Patent 3,838,909).

Regarding claim 17, Redmond et al. discloses a light generating means for generating light (reference number 47), a first light guiding means including a first portion through which the light is incident and a second portion from which the light is emitted (reference number 13), and a second light guiding means including opposite

first and second side portions (Fig. 1), at least one of which is adjacent to the light generating means (Fig. 1), a light projecting portion (reference number 34) adjacent to the first portion of the first light guiding means (Fig. 1), and a light reflecting portion (reference number 35) having a distance from the light projecting portion (Fig. 1), the distance between the light projecting portion and the light reflecting portion becoming narrow as an amount of light flux emitted from the light generating means decreases (Fig. 2). Redmond et al. does not disclose a reflection type liquid crystal display device.

Fitzgibbons discloses a liquid crystal display panel for displaying an image (column 1, line 44), and an illumination device disposed in a front of the liquid crystal display panel (column 1, lines 42-50).

It would have been obvious to one of ordinary skill in the art to use the panel display of Redmond et al. in the reflection type liquid crystal display device of Fitzgibbons to provide illumination to the display.

Concerning claim 18, Redmond et al. discloses at least one light source (reference number 47).

Regarding claim 19, Redmond et al. discloses a point-shaped light source (column 1, line 18).

Concerning claim 20, Redmond et al. discloses the light reflecting portion including a concave section towards the light projecting surface (Figs. 1 and 2).

Regarding claim 22, Redmond et al. discloses the concave section as having a bottom portion (Fig. 2), and a position of the bottom portion is defined by a following equation:

$X : Y = w1 : w2$, wherein X is a linear distance from the first side portion to the bottom portion, Y is a linear distance from the second side portion to the bottom portion, X+Y is a linear distance from the first side portion to the second side portion, w1 is a width of the first side portion, and w2 is a width of the second side portion (Fig. 2). (The middle of the light reflecting portion is part of the bottom portion, and the middle satisfies the above equation.)

Concerning claim 23, Redmond et al. discloses a linear distance between the bottom portion and the light projecting portion is smaller than a smaller width of the widths of the first and second side portions (Fig. 2).

Concerning claim 24, Redmond et al. discloses the concave section comprising a plurality of groove patterns (Figs. 2 and 3).

13. Claims 5 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Redmond et al. in view of Takeichi et al. (U.S. Patent 3,761,704).

Regarding claim 5, Redmond et al. does not disclose a concave section that has a "V" shape. Takeichi et al. discloses a concave section that has a "V" shape inclined from opposite ends of the light reflecting portion adjacent to the first and second side portions (Fig. 4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the "V" shape of Takeichi et al. in the apparatus of Redmond et al. to distribute the light uniformly.

Concerning claim 16, Redmond et al. does not disclose a concave section that has a "V" shape. Takeichi et al. discloses the light reflecting portion that has a "V" shape inclined toward the light projecting portion from opposite side ends of the light reflecting portion adjacent to the first and second side portions (Fig. 4).

14. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Redmond et al. in view of Kalmanash (U.S. Patent 5,442,522).

Regarding claim 10, Redmond et al. does not disclose a first number of first light sources being different from a second number of the second light sources. Kalmanash discloses a first number of the first light sources (reference number 50) being different from the second number of the second light sources (reference number 42).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the light source configuration of Kalmanash in the apparatus of Redmond et al. to provide a different light flux coming from each side of the apparatus.

15. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Redmond et al. in view of Rogoff (U.S. Patent 5,055,978).

Regarding claim 14, Redmond et al. does not disclose a light scattering member. Rogoff discloses the second light guiding means having a light scattering member (abstract). The portion of the claim starting with "which" and continuing to the end of the

Art Unit: 2875

claim consists of functional language that is not given patentable weight. See M.P.E.P. 2114.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the light scattering member of Rogoff in the apparatus of Redmond et al. for scattering the light.

16. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Redmond et al. in view of Fitzgibbons as applied to claim 20 above, and further in view of Takeichi et al.

Regarding claim 21, Redmond et al. does not disclose a concave section that has a "V" shape. Takeichi et al. discloses a concave section that has a "V" shape inclined from opposite ends of the light reflecting portion adjacent to the first and second side portions (Fig. 4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the "V" shape of Takeichi et al. in the apparatus of Redmond et al. to distribute the light uniformly.

17. Claim 25 rejected under 35 U.S.C. 103(a) as being unpatentable over Redmond et al. in view of Fitzgibbons as applied to claim 17 above, and further in view of Rogoff.

Regarding claim 25, Redmond et al. does not disclose a light scattering member. Rogoff discloses the second light guiding means having a light scattering member

Art Unit: 2875

(abstract). The portion of the claim starting with "which" and continuing to the end of the claim consists of functional language that is not given patentable weight. See M.P.E.P. 2114.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the light scattering member of Rogoff in the apparatus of Redmond et al. for scattering the light.

Allowable Subject Matter

18. Claim 11 would be allowable if rewritten to overcome the objections set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter. The prior art fails to disclose an illumination device that wherein the widths of the first and second side portions are defined by the equation involving the number of light sources listed in the claim.

Conclusion

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


Hathaway et al. (U.S. Patent 5,050,946) discloses a faceted light pipe.

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sharon E. Payne whose telephone number is (703) 308-2125. The examiner can normally be reached during regular business hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (703) 305-4939. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

sep
March 7, 2003



Sandra O'Shea
Supervisory Patent Examiner
Technology Center 2800